

REMARKS / ARGUMENTS

Status of Claims

Claims 1-60 are pending and are rejected. Of the pending claims, Applicant has amended Claims 1, 2, 4, 8, 10, 14, 16, 22, 25, 27, 29, 30, 35, 40, 42, 43, 44, 45, 46, 58, 59, and 60, leaving Claims 1-60 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Objections to the Specification

The Examiner has objected to the specification under 35 U.S.C. §112, first paragraph, as failing to provide an enabling disclosure. Applicant has amended the claims in alternative language to more particularly describe the subject matter of the invention, which is supported by an enabling disclosure. Further discussion on the claim amendments and support in the specification therefore is provided later in this paper. In addition, the prior Remarks/Arguments with regard to any prior objection under 35 U.S.C. §112 are incorporated by reference.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of this objection.

Rejection Under 35 U.S.C. §112, First Paragraph

Claims 1-60 are rejected under 35 U.S.C. §112, first paragraph, for reasons set forth in the objection to the specification. The Examiner comments that the specification fails to provide an enabling disclosure. Applicant traverses this comment for the following reasons. In addition the prior Remarks/Arguments with regard to any prior rejection under 35 U.S.C. §112, first paragraph, are incorporated by reference.

Applicant respectfully submits that where the specification contains a written description of the invention in such full, clear, concise, and exact terms as to enable any

person skilled in the art to which it pertains to make and use the same, then such written description complies with 35 U.S.C. §112, first paragraph.

Applicant believes the present specification and claims satisfy that burden.

As noted in prior Remarks/Arguments, the present specification, drawing and claims disclose and describe a specific and operative embodiment of the invention by example of operating parameters, choice of materials and functioning results.

Applicant has amended independent Claims 1, 2, 8, 14, 22, and 25, in alternative language to now claim, inter alia, ...the detector, or means for detecting, not being photosensitive to the first part of the spectrum, and the detector, or means for detecting, being photosensitive to the second part of the spectrum.

Applicant has amended independent Claims 29, 30, 42, 43, 44, and 45, in alternative language to now claim, inter alia, ...the emission spectrum having a wavelength at which the detector, or means for detecting, is photosensitive to, and the filter, or means for filtering, having a transmission spectrum that suppresses the wavelength that the detector, or means for detecting, is photosensitive to.

Applicant has amended independent Claims 46, 58, , in alternative language to now claim, inter alia, ...means for detecting that has a sensitivity to the emission spectrum where the photosensitivity of the means for detecting is responsive to a wavelength of the emission spectrum, and means for filtering having a transmission spectrum that suppresses the wavelength of the emission spectrum that the means for detecting is photosensitive to.

Support for the invention as claimed is found in the description. For example: Paragraph [0020] discloses radiation of a first wavelength being transformed into radiation of a second wavelength in the order of that of visible light; Paragraphs [0021] and [0030] disclose photons (a quantum unit of light energy) that inherently have an energy content; Paragraph [0025] discloses a cassette 3 containing intensifier 19 and detection element 20; Paragraph [0026] discloses intensifier 19 being responsive to X-ray radiation and emitting visible light to detection element 20; Paragraph [0027-0028] discloses an embodiment where detection element 20 is a photosensitive film having a sensitivity to certain wavelengths; Paragraph [0030] discloses the photosensitive film being sensitive to short wavelengths (where the short wavelengths inherently have higher

radiation energy content than the long wavelengths of the emission spectrum from intensifier 19); Paragraph [0031] discloses a filter 21 that filters out undesirable wavelengths of light; Paragraph [0035] discloses a filter that transmits photons of certain wavelengths and intercepts photons of other wavelengths; and, Figure 5 discloses an emission spectrum 29 of intensifier 19, a sensitivity 30 of photosensitive film 20, and a transmission spectrum 31 of filter 21, where the transmission spectrum 31 suppresses short wavelengths that have sufficient radiation energy to effect the image quality at detector 20 due to the photosensitive characteristics thereof.

Figure 5 discloses the evolution of transmission of an optical filter (curve 31) such that light having a wavelength smaller than about 500 nm is not transmitted, and that light having a wavelength greater than about 500 nm is transmitted. Since all electromagnetic radiation, including light, inherently has an energy content, with the energy content being greater for smaller wavelengths, the energy content of the small wavelength light was found to be capable of producing a temperature shift (that is, a clouding or ghosting) at the detector due to its photosensitive characteristics. At paragraph [0030], Applicant discloses an observation that the film (detector 29) was generally sensitive to short wavelengths. As illustrated at Figure 5, a filter 21 having the characteristic of curve 31 is capable of transmitting a portion of the emission spectrum of intensifier (curve 29) having a low photosensitive effect (wavelengths greater than about 500 nm), and is capable of intercepting (or filtering out) a portion of the emission spectrum of intensifier (curve 29) having high photosensitive effect (wavelengths less than about 500 nm). Figure 5 also discloses the sensitivity (curve 30) of a photosensitive film such that the film (or detection element) 20 and the filter 21 provide for a wavelength exposure window at detection element 20 that is at about 545 nm, which is seen to be the principle peak of emission spectrum of intensifier (curve 29).

Paragraphs [0029]-[0031] disclose a means for filtering out undesirable photons of certain wavelengths while permitting photons of other wavelengths to pass, thereby avoiding a temperature shift (clouding or ghosting) that may be encountered at cassette 3, or more notably at a photosensitive film.

Paragraphs [0034]-[0038] disclose a filter 21 for intercepting photons of undesirable wavelengths, thereby reducing errors in measurement at detection element 20.

The Examiner comments that Applicant has not disclosed that the sensitivity of the detector is a function of temperature, and that the invention is not enabling for light sources in general.

As discussed previously, Applicant has amended the claims in alternative language thereby traversing these comments. Specifically, Applicant's invention is directed to the photosensitivity of the detector and the transmission spectrum of the filter, and is directed to a light source responsive to incident photons.

In view of the foregoing, Applicant submits that the specification as filed contains a written description of the invention in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains to make and use the same. Here, Applicant has fully, clearly, and concisely, described a detector 20 that is photosensitive to a light emission spectrum emitted from an intensifier 19, that a filter 21 is constructed to transmit that portion of the light emission spectrum that the detector 20 is not photosensitive to, that the filter 21 is constructed to intercept that portion of the light emission spectrum that the detector 20 is photosensitive to, and that the photosensitivity of the detector 20 is a result of radiation effects from certain wavelengths of the light emission spectrum.

The description and claims disclose and teach how to make and practice the invention as claimed as required by 35 USC §112, and disclose and describe a specific *operative* embodiment of the invention as claimed. There is no requirement in the statute for the applicant to provide a theory of operation or any disclosure alleging a scientific basis for the invention as claimed.

Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw this rejection, which Applicant respectfully considers to be traversed.

Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 1-60 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that

Applicant regards as the invention. The Examiner comments that Claims 1, 2, 8, 14, 22, 25, and 42-44, are obscure for reasons relating to temperature, and that Claims 1, 2, 8, 14, 22, 25, 45, 46, and 58-60, contain language that is unclear. Applicant traverses these comments for the following reasons.

At the outset, it is noted that independent Claims 29 and 30 have not been specifically rejected by the Examiner. Accordingly, Applicant respectfully requests a full and complete explanation for the rejections, or reconsideration and withdrawal thereof.

Applicant respectfully submits that where the specification contains a written description of the invention in such full, clear, concise, and exact terms as to particularly point out and distinctly claim subject matter that applicant regards as the invention, then such written description complies with 35 U.S.C. §112, second paragraph. Applicant believes the present specification and claims satisfy that burden.

Applicant has amended independent Claims 1, 2, 8, 14, 22, 25, 42, 43, 44, 45, 46, 58, 59 and 60, in alternative language to more particularly point out and distinctly claim subject matter that Applicant regards as the invention, and has discussed such amendments above in reference to the rejection under 35 U.S.C. §112, first paragraph. The claim amendments and earlier discussion clearly indicate that the claimed invention has been fully, clearly, and concisely described and claimed.

In view of all the foregoing remarks and accompanying amendments, Applicant respectfully submits that the claimed subject matter is described in such a manner that reasonably conveys to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw all of the rejections under 35 U.S.C. §112, second paragraph, which Applicant considers to be traversed.

Furthermore, Claims 29 to 44 were previously indicated as allowable, i.e., patentable over the then cited prior art (Quint et al) and patentable with regard to 35 U.S.C. §112, first and second paragraphs. The Applicant is entitled to rely on the validity of the allowance of Claims 29 to 44 as guidance for amending other pending claims to adding new claims. While the Examiner may cite appropriate new prior art, any reversal

of the allowance of Claims 29 to 44 is prejudicial to the good faith examination of the application.

Rejections Under 35 U.S.C. §103(a)

Claims 1-60 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yamasaki et al. (U.S. Patent No. 6,242,114) (hereinafter, Yamasaki). The Examiner alleges that Yamasaki teaches medical radiation detection means having a filter 24 configured to control the emission of the fluorescent material in any way (lines 38-44 of col. 4, 42-48 of col. 8, and 47-52 of col. 9), and that lines 50-54 of col. 2 explain that the invention eliminates thermal (temperature) deterioration of prior art systems. (Paper 20040112, page 4). The Examiner acknowledges that Yamasaki does not detail the structure of the detector, but alleges that it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ therefore any known type including photographic and electronic forms (claims 23 and 37-39). (Paper 20040112, page 4).

Applicant traverses the Examiner's rejections for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the cited reference is improper as the reference fails to teach or suggest each and every element of the invention as claimed. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

In view of the amendments to the claims and the earlier discussion, Applicant submits that Yamasaki is absent a teaching, suggestion, or motivation that would arrive at the claimed invention. For example, Yamasaki does not teach:

...the detector, or means for detecting, not being photosensitive to the first part of the spectrum, and the detector, or means for detecting, being photosensitive to the second part of the spectrum;

...the emission spectrum having a wavelength at which the detector, or means for detecting, is photosensitive to, and the filter, or means for filtering, having a transmission

spectrum that suppresses the wavelength that the detector, or means for detecting, is photosensitive to;

...means for detecting that has a sensitivity to the emission spectrum where the photosensitivity of the means for detecting is responsive to a wavelength of the emission spectrum, and means for filtering having a transmission spectrum that suppresses the wavelength of the emission spectrum that the means for detecting is photosensitive to; as claimed in the instant invention.

The Examiner alleges that Yamasaki teaches a filter that is configured to control the emission of the fluorescent material in any way (lines 38-44 of col. 4, 42-48 of col. 8, and 47-52 of col. 9), and that lines 50-54 of col. 2 explain that the invention eliminates thermal (temperature) deterioration of prior art systems. (Paper 20040112, page 4).

In comparing Yamasaki with the instant invention, Applicant finds Yamasaki as referenced to teach a filter that is configured to control the emission of the fluorescent material in a specific way, not in any way, and certainly not in the way claimed in the instant invention. Specifically, at col. 4, lines 38-44, Yamasaki discloses that “the filter 24 is designed to affect the transmission of light *in discrete regions of* the UV-visible-IR spectra to regulate *the specific absorption and/or emission bands of* the fluorescent material.” (Emphasis added). Here, Applicant does not find Yamasaki to teach a filter that is configured to control the emission of the fluorescent material *in any way*. Also, at col. 8, lines 42-48, Yamasaki discloses “short wave pass and/or long wave pass filter” without establishing a relationship between the filter and the photosensitivity of the detector as claimed in the instant invention. Furthermore, at col. 9, lines 47-52, Yamasaki discloses an advantage of the Yamasaki invention in that adjustment of Yamasaki fluorescence levels requires only well-known modifications of production filter coating designs. Here, Yamasaki does not teach or suggest how to arrive at the present invention as claimed.

In view of the foregoing, Applicant submits that Yamasaki fails to teach or suggest each and every element of the invention as claimed and discloses a substantially different invention from the invention as claimed, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Furthermore, the Remarks/Arguments presented in earlier amendments with regard to the patentability of the claims over Quint et al. are fully responsive to the traversal of the rejection of the claims over Yamasaki et al. and such Remarks/Arguments are incorporated by reference.

In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. §112, first paragraph, 35 U.S.C. §112, second paragraph, and 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections. Accordingly, the Applicant requests a timely Notice of Allowance in this application.

The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 07-0845.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

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